

Having Kittens

Here is a poster published by an organization that looks after stray cats.

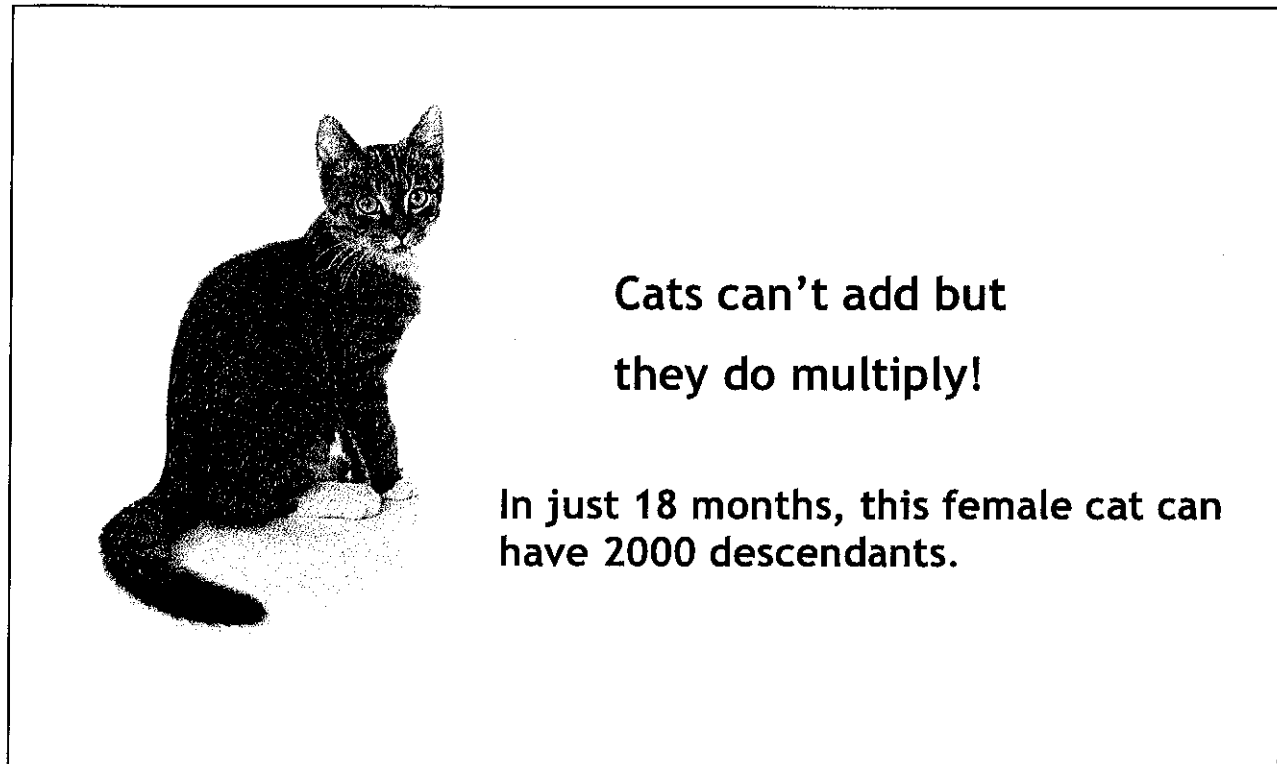
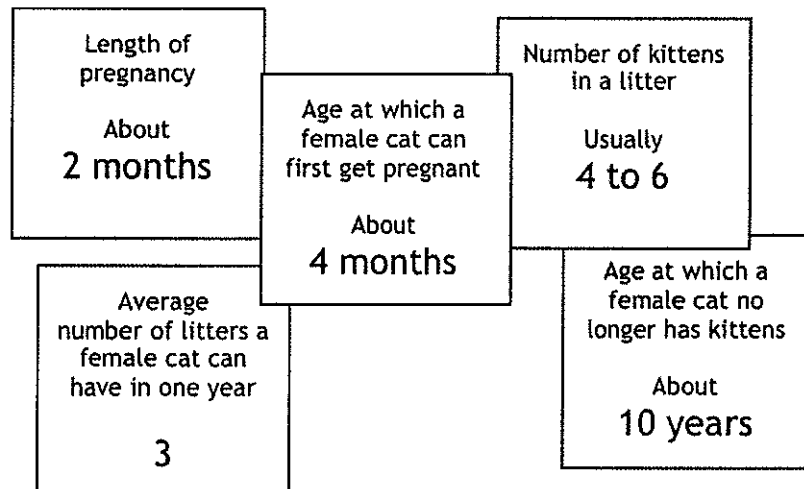
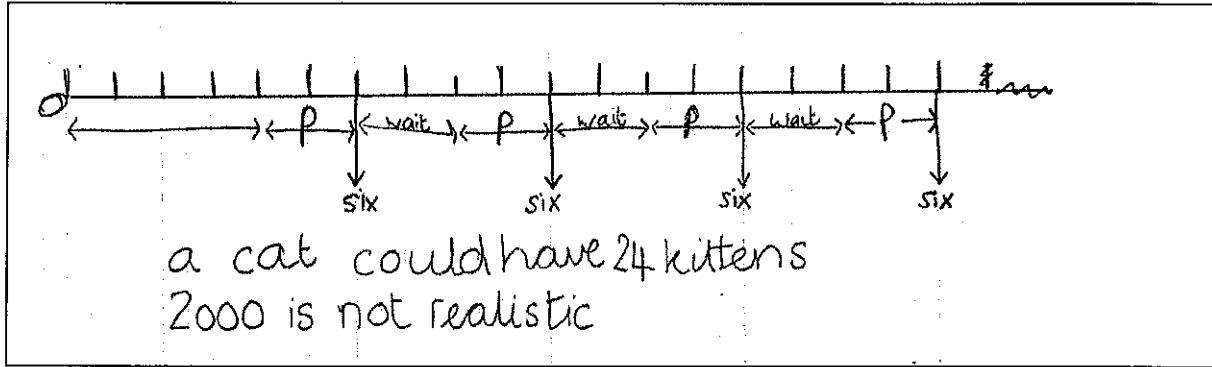


Figure out whether this number of descendants is realistic.

Here are some facts that you will need:



Sample Responses to Discuss: Alice

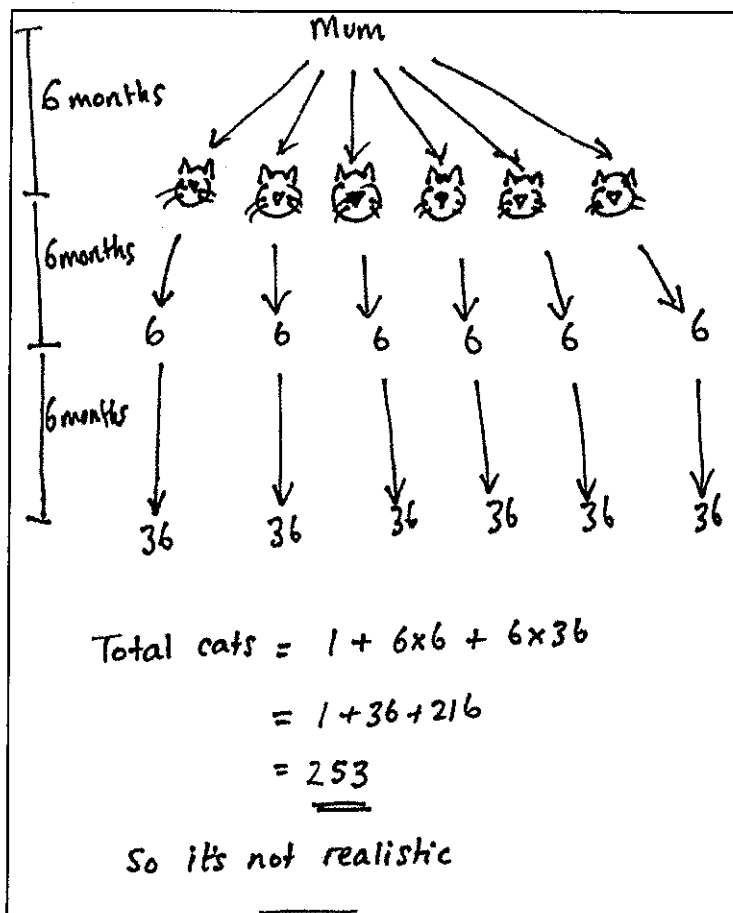


What has Alice done correctly?

What assumptions has she made?

How could this solution be improved?

Sample Responses to Discuss: Wayne



What has Wayne done correctly?

What assumptions has he made?

How can Wayne's work be improved?

Diagram 1

Generation of kittens											
	0	1	2	2	2	2	3	3	3	4	Cum. total
0	1	6									7
1											7
2											7
3											7
4		6									13
5											13
6			36								49
7											49
8		6									55
9											55
10			36	36							127
11											127
12		6					216				349
13											349
14			36	36	36						457
15											457
16		6					216	216	216		1111
17											1111
18			36	36	36	36				1296	2551

Diagram 2

Generation of kittens									
	0	1	2	2	2	3	3		Cum. total
0	1								1
1									1
2		3							4
3									4
4									4
5									4
6		3							7
7									7
8			9						16
9									16
10		3							19
11									19
12			9	9					37
13									37
14		3				27			67
15									67
16			9	9	9				94
17									94
18		3				27	27		151

The number of descendants of the cat is much greater in the first diagram than in the second. Changing the set of assumptions has a significant effect on the outcome.